

A NOTE ON THE STATUS OF *ORNITHOPTERA MERIDIONALIS*
TARUNGARENSIS (JOICEY AND TALBOT)
(LEPIDOPTERA: PAPILIONIDAE)

By D. L. Hancock

National Museum, P.O. Box 240, Bulawayo, Zimbabwe

Abstract

The taxon *tarungarensis*, currently placed as a subspecies of *Ornithoptera meridionalis* (Rothschild), is transferred to *O. paradisea* Staudinger, as *O. p. tarungarensis* (Joicey and Talbot) comb. nov. A population of true *O. meridionalis* occurs nearby.

Introduction

In January-February, 1921, C., F., and J. Pratt collected four female *Troides* (*Ornithoptera*) specimens near the Wanggar River in Irian Jaya. Three of the females were taken at Nomnangihé, 40 km south of Wanggar, the other 25 km from the coast. Joicey and Talbot (1927) described two of these females, one from each locality, as *Troides meridionalis tarungarensis* (Fig. 1). The other two specimens have been referred to *paradisea arfakensis* Joicey and Noakes (Haugum and Low, 1979).

The anomaly of these two closely allied species occurring together, in view of their allopatric occurrence elsewhere, has remained largely unnoticed, let alone questioned, since their original discovery. Haugum and Low (1979) gave a detailed discussion of the known specimens from this area, including a male from the foothills of the Weyland Mountains, yet maintained them as two specifically distinct populations. D'Abrera (1975) also maintained *tarungarensis* as a subspecies of *meridionalis*.

Discussion

In assessing this anomalous population several points need to be considered:—

- 1.—Females of both alleged species (*meridionalis* and *paradisea*) occur together at Nomnangihé, altitude 650 m (2000').
- 2.—A female of alleged *meridionalis* was taken nearer the coast, at an altitude of 200 m (600').
- 3.—A male, referable to *paradisea* but morphologically distinct, was taken in the foothills of the Weyland Mountains, altitude 100-200 m (Haugum and Low, 1979).
- 4.—A further male (Fig. 2), identical to that above, has been taken near the coast (Wanggar R., west of Nabire), at an altitude of about 100 m (Straatman, pers. comm.).

The above records show that both *paradisea* and alleged *meridionalis* occur together at both low and high altitudes within the Wanggar-Weyland Mountains area. and while both males and females of *paradisea* occur, only females of *meridionalis* have been reliably reported.

A comparison between descriptions and illustrations of *tarungarensis* and the Wanggar *paradisea* females (D'Abbrera, 1975; Haugum and Low, 1979) indicates that the only difference of any significance is the degree of projection of the hind wing tornal angle, being rounded in *tarungarensis* (and other *meridionalis*) and distinctly pointed in *paradisea*.

Haugum and Low (1979) use this as a specific character to separate the otherwise virtually indistinguishable females of these two species. However, this is an unreliable character, at least in some populations. Of two female *paradisea borchii* Haugum and Low in the collection of the National Museum, Bulawayo, one has a distinctly pointed hind wing tornus, the other has a rounded tornus (Fig. 3), similar to that of *meridionalis*. Both specimens were collected at Ravik, in the West Sepik district; both have yellow-streaked femora and lack pale markings in the hind wing cell. A pointed or rounded tornal angle is also evident in other birdwing populations, e.g. *priamus admiralitatis* Rothschild (Haugum and Low, 1979: fig. 131) and this character therefore cannot be used to differentiate between species.



Figs 1-3. *Ornithoptera paradisea*: (1) *O. p. tarungarensis*, female; (2) *O. p. tarungarensis*, male; (3) *O. p. borchii*, female.

Other characters, such as pattern details, presence of white basal dusting on the fore wing and abdominal colour, are also variable, examples of *paradisea* females from other Irian Jaya populations sometimes approaching the *meridionalis* phenotype.

Populations of true *meridionalis* have recently been discovered in the Kamrau Bay and Lake Jamur areas of Irian Jaya, approximately 200 km west of the Weylands Mts (Pasternak, 1981; Kobayashi, 1981). Females from Kamrau Bay are very similar to typical *meridionalis* and "typical" *tarungarensis*. However, *tarungarensis* (and *paradisea*) females differ from those of *meridionalis* from both populations in having a grey dusting over much of the fore wing discal pale areas, contrasting with the purer white discal areas of

meridionalis. The hind wing submarginal pale area is also less sharply separated from the marginal black band in *tarunggarensis* and *paradisea* than in *meridionalis*. The only other character appears to be a structural one. In both *meridionalis* populations (and most *paradisea* populations) the hind wing has vein 3 closer to vein 2 than to vein 4; in *tarunggarensis* and *paradisea arfakensis* vein 3 is closer to vein 4 than to vein 2.

The two *tarunggarensis* type specimens can thus be associated with the two female and two male *paradisea* from this area, the males differing from other subspecies in having a greatly expanded fore wing green area. The distinctness of the males supports the continued recognition of this population as a subspecies, here referred to *O. paradisea tarunggarensis* (Joicey and Talbot), **comb. nov.**

It thus appears that *paradisea* and *meridionalis* are allopatric, although they may occur in close geographical proximity. Only *paradisea* occurs in and to the north of the Weyland Mts; *meridionalis* occurs further to the west. The nearest other *paradisea* population, *O. p. flavescens* Rothschild, occurs at Etna Bay, south-west of the Weyland Mts, and thus occurs closest to the western *meridionalis* population. A further *paradisea* population occurs to the east, south of the Snow Mts (Haugum and Low, 1979). *O. p. flavescens* has females with yellow streaked femora and no pale markings in the hind wing cell, as in eastern *paradisea* populations and *p. chrysanthemum* Kobayashi and Koiwaya (1979) from Manokwari; both *p. arfakensis* and *p. tarunggarensis* females have black femora and the hind wing pale area extending well into the cell, as in *meridionalis*.

It is interesting to note that both populations of *meridionalis* occur in areas of primary rainforest on detritus sediments in the southern Depression zone. Intervening areas have been subjected to more recent inundations, which would account for the absence of *meridionalis* from these areas. The various *paradisea* populations occur to the north of this zone, with geological factors appearing less restrictive.

Acknowledgements

I wish to thank Mr R. Straatman for supplying details and photographs of the male *paradisea* from the Wanggar River, and for helpful discussions thereon. Miss C. Harris kindly prepared the figures.

References

- D'Abrera, B., 1975. *Birdwing butterflies of the world*. Lansdowne, Melbourne.
- Haugum, J. and Low, A. M., 1979. *A monograph of the birdwing butterflies*. Vol. 1, parts 2 & 3. Scandinavian Science Press, Klampenborg.
- Joicey, J. J. and Talbot, G., 1927. New forms of Lepidoptera Rhopalocera. *Enycl. ent. Ser. B*, Section 3, Lepidoptera 2(1): 1-14.
- Kobayashi, H., 1981. *Ornithoptera (Schoenbergia) meridionalis* Rothschild 1897. *Trans. Himeji nat. Hist. Assoc.* 1981: 15-20.
- Kobayashi, H. and Koiwaya, S., 1979. A new subspecies of *Ornithoptera paradisea* (Lepidoptera: Papilionidae) from West Irian. *Trans. Himeji nat. Hist. Assoc. Special Issue*, 1979: 5-12.
- Pasternak, J., 1981. On the rediscovery of *Ornithoptera meridionalis tarunggarensis* Joicey and Talbot on a new locality in Kamrau Bay, south-west Irian Jaya, Indonesia. *Trans. Himeji nat. Hist. Assoc.* 1981: 2-14.